Maxxam
A Bureau Veritas Group Company

Your Project #: BFTA
Your C.O.C. #: 637577-01-01

Attention: Tom Cambareri

Cape Cod Comission
Cape Cod Commission
3225 Main Street
Barnstable, MA
USA 02630

Report Date: 2018/01/10
Report #: R4933315
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7T1653
Received: 2017/12/23, 17:30

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
PFOS and PFOA in water by SPE/LCMS (1)	2	2018/01/04	2018/01/05	CAM SOP-00894	EPA 537 m
PFOS and PFOA in water by SPE/LCMS (1)	1	2018/01/06	2018/01/08	CAM SOP-00894	EPA 537 m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Per- and polyfluoroalkyl substances (PFAS) identified as surrogates on the certificate of analysis represent the extracted internal standard.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

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Encryption Key

Khalida Aram
Project Manager
10 Jan 2018 12:06:21

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Stephanie Pollen, Project Manager
Email: SPollen@maxxam.ca
Phone# (905) 817-5700
==========
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam Job #: B7T1653
Report Date: 2018/01/10

Cape Cod Comission
Client Project #: BFTA
Sampler Initials: TC

RESULTS OF ANALYSES OF WATER

Maxxam ID		FVC566				FVC567			
Sampling Date		2017/12/21 16:00				2017/12/21 16:00			
COC Number		637577-01-01				637577-01-01			
	UNITS	**INFLUENT PRW-4**	**RDL**	**MDL**	**QC Batch**	**MIDPOINT**	**RDL**	**MDL**	**QC Batch**
Miscellaneous Parameters									
6:2 Fluorotelomer sulfonate	ug/L	<0.22	0.22	0.073	5339954	0.049	0.022	0.0073	5342895
8:2 Fluorotelomer sulfonate	ug/L	<0.22	0.22	0.073	5339954	0.014	0.022	0.0073	5342895
N-ethylperfluorooctane sulfonamide	ug/L	<0.22	0.22	0.11	5339954	<0.011	0.022	0.011	5342895
N-ethylperfluorooctane sulfonamidoe	ug/L	<0.22	0.22	0.087	5339954	<0.0087	0.022	0.0087	5342895
N-methylperfluorooctane sulfonamide	ug/L	<0.22	0.22	0.14	5339954	<0.014	0.022	0.014	5342895
N-methylperfluorooctanesulfonamidol	ug/L	<0.22	0.22	0.13	5339954	<0.013	0.022	0.013	5342895
Perfluorobutanoic acid	ug/L	<0.22	0.22	0.061	5339954	0.030	0.022	0.0061	5342895
Perfluorobutane Sulfonate (PFBS)	ug/L	<0.22	0.22	0.059	5339954	0.016	0.022	0.0059	5342895
Perfluorodecane Sulfonate	ug/L	<0.22	0.22	0.066	5339954	<0.0066	0.022	0.0066	5342895
Perfluoroheptanoic Acid (PFHpA)	ug/L	<0.22	0.22	0.081	5339954	0.030	0.022	0.0081	5342895
Perfluoroheptane sulfonate	ug/L	<0.22	0.22	0.088	5339954	0.013	0.022	0.0088	5342895
Perfluorohexanoic Acid (PFHxA)	ug/L	<0.22	0.22	0.039	5339954	0.067	0.022	0.0039	5342895
Perfluorohexane Sulfonate (PFHxS)	ug/L	0.36	0.22	0.062	5339954	0.11	0.022	0.0062	5342895
Perfluorononanoic Acid (PFNA)	ug/L	<0.22	0.22	0.096	5339954	0.013	0.022	0.0096	5342895
Perfluorooctane Sulfonamide (PFOSA)	ug/L	<0.22	0.22	0.037	5339954	<0.0037	0.022	0.0037	5342895
Perfluoropentanoic Acid (PFPeA)	ug/L	<0.22	0.22	0.083	5339954	0.064	0.022	0.0083	5342895
Perfluorotetradecanoic Acid	ug/L	<0.22	0.22	0.030	5339954	<0.0030	0.022	0.0030	5342895
Perfluorotridecanoic Acid	ug/L	<0.22	0.22	0.042	5339954	<0.0042	0.022	0.0042	5342895
Perfluoroundecanoic Acid (PFUnA)	ug/L	<0.22	0.22	0.028	5339954	0.020	0.022	0.0028	5342895
Perfluorodecanoic Acid (PFDA)	ug/L	<0.22	0.22	0.067	5339954	<0.0067	0.022	0.0067	5342895
Perfluorododecanoic Acid (PFDoA)	ug/L	<0.22	0.22	0.055	5339954	<0.0055	0.022	0.0055	5342895
Perfluoro-n-Octanoic Acid (PFOA)	ug/L	<0.22	0.22	0.036	5339954	0.023	0.022	0.0036	5342895
Perfluorooctane Sulfonate (PFOS)	ug/L	1.7	0.22	0.066	5339954	0.47	0.022	0.0066	5342895
Surrogate Recovery (%)									
13C2-6:2 Fluorotelomer sulfonate	%	100	N/A	N/A	5339954	81	N/A	N/A	5342895
13C2-8:2 Fluorotelomer sulfonate	%	99	N/A	N/A	5339954	68	N/A	N/A	5342895
13C2-Perfluorodecanoic acid	%	81	N/A	N/A	5339954	69	N/A	N/A	5342895
13C2-Perfluorododecanoic acid	%	74	N/A	N/A	5339954	64	N/A	N/A	5342895
13C2-Perfluorohexanoic acid	%	87	N/A	N/A	5339954	75	N/A	N/A	5342895
13C2-perfluorotetradecanoic acid	%	71	N/A	N/A	5339954	60	N/A	N/A	5342895
13C2-Perfluoroundecanoic acid	%	78	N/A	N/A	5339954	67	N/A	N/A	5342895
13C4-Perfluorobutanoic acid	%	89	N/A	N/A	5339954	74	N/A	N/A	5342895
13C4-Perfluoroheptanoic acid	%	86	N/A	N/A	5339954	77	N/A	N/A	5342895
13C4-Perfluorooctanesulfonate	%	83	N/A	N/A	5339954	75	N/A	N/A	5342895

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Report Date: 2018/01/10

Cape Cod Comission
Client Project #: BFTA
Sampler Initials: TC

RESULTS OF ANALYSES OF WATER

Maxxam ID		FVC566				FVC567			
Sampling Date		2017/12/21 16:00				2017/12/21 16:00			
COC Number		637577-01-01				637577-01-01			
	UNITS	**INFLUENT PRW-4**	**RDL**	**MDL**	**QC Batch**	**MIDPOINT**	**RDL**	**MDL**	**QC Batch**
13C4-Perfluorooctanoic acid	%	85	N/A	N/A	5339954	75	N/A	N/A	5342895
13C5-Perfluorononanoic acid	%	86	N/A	N/A	5339954	82	N/A	N/A	5342895
13C5-Perfluoropentanoic acid	%	87	N/A	N/A	5339954	75	N/A	N/A	5342895
13C8-Perfluorooctane Sulfonamide	%	71	N/A	N/A	5339954	63	N/A	N/A	5342895
18O2-Perfluorohexanesulfonate	%	89	N/A	N/A	5339954	83	N/A	N/A	5342895
N-ethyl-d5-perfluorooctane sulfonam	%	59	N/A	N/A	5339954	55	N/A	N/A	5342895
N-methyl-d3-perfluorooctane sulfona	%	62	N/A	N/A	5339954	56	N/A	N/A	5342895

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RESULTS OF ANALYSES OF WATER

Maxxam ID		FVC568			
Sampling Date		2017/12/21 16:00			
COC Number		637577-01-01			
	UNITS	**EFFLUENT**	**RDL**	**MDL**	**QC Batch**
Miscellaneous Parameters					
6:2 Fluorotelomer sulfonate	ug/L	<0.020	0.020	0.0066	5339954
8:2 Fluorotelomer sulfonate	ug/L	<0.020	0.020	0.0066	5339954
N-ethylperfluorooctane sulfonamide	ug/L	<0.020	0.020	0.010	5339954
N-ethylperfluorooctane sulfonamidoe	ug/L	<0.020	0.020	0.0079	5339954
N-methylperfluorooctane sulfonamide	ug/L	<0.020	0.020	0.013	5339954
N-methylperfluorooctanesulfonamidol	ug/L	<0.020	0.020	0.012	5339954
Perfluorobutanoic acid	ug/L	<0.020	0.020	0.0055	5339954
Perfluorobutane Sulfonate (PFBS)	ug/L	<0.020	0.020	0.0054	5339954
Perfluorodecane Sulfonate	ug/L	<0.020	0.020	0.0060	5339954
Perfluoroheptanoic Acid (PFHpA)	ug/L	<0.020	0.020	0.0074	5339954
Perfluoroheptane sulfonate	ug/L	<0.020	0.020	0.0080	5339954
Perfluorohexanoic Acid (PFHxA)	ug/L	<0.020	0.020	0.0035	5339954
Perfluorohexane Sulfonate (PFHxS)	ug/L	<0.020	0.020	0.0056	5339954
Perfluorononanoic Acid (PFNA)	ug/L	<0.020	0.020	0.0087	5339954
Perfluorooctane Sulfonamide (PFOSA)	ug/L	<0.020	0.020	0.0034	5339954
Perfluoropentanoic Acid (PFPeA)	ug/L	<0.020	0.020	0.0075	5339954
Perfluorotetradecanoic Acid	ug/L	<0.020	0.020	0.0027	5339954
Perfluorotridecanoic Acid	ug/L	<0.020	0.020	0.0038	5339954
Perfluoroundecanoic Acid (PFUnA)	ug/L	<0.020	0.020	0.0025	5339954
Perfluorodecanoic Acid (PFDA)	ug/L	<0.020	0.020	0.0061	5339954
Perfluorododecanoic Acid (PFDoA)	ug/L	<0.020	0.020	0.0050	5339954
Perfluoro-n-Octanoic Acid (PFOA)	ug/L	<0.020	0.020	0.0033	5339954
Perfluorooctane Sulfonate (PFOS)	ug/L	<0.020	0.020	0.0060	5339954
Surrogate Recovery (%)					
13C2-6:2 Fluorotelomer sulfonate	%	97	N/A	N/A	5339954
13C2-8:2 Fluorotelomer sulfonate	%	82	N/A	N/A	5339954
13C2-Perfluorodecanoic acid	%	88	N/A	N/A	5339954
13C2-Perfluorododecanoic acid	%	76	N/A	N/A	5339954
13C2-Perfluorohexanoic acid	%	87	N/A	N/A	5339954
13C2-perfluorotetradecanoic acid	%	72	N/A	N/A	5339954
13C2-Perfluoroundecanoic acid	%	78	N/A	N/A	5339954
13C4-Perfluorobutanoic acid	%	87	N/A	N/A	5339954
13C4-Perfluoroheptanoic acid	%	87	N/A	N/A	5339954
13C4-Perfluorooctanesulfonate	%	85	N/A	N/A	5339954

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RESULTS OF ANALYSES OF WATER

Maxxam ID		FVC568			
Sampling Date		2017/12/21 16:00			
COC Number		637577-01-01			
	UNITS	**EFFLUENT**	**RDL**	**MDL**	**QC Batch**
13C4-Perfluorooctanoic acid	%	85	N/A	N/A	5339954
13C5-Perfluorononanoic acid	%	83	N/A	N/A	5339954
13C5-Perfluoropentanoic acid	%	84	N/A	N/A	5339954
13C8-Perfluorooctane Sulfonamide	%	84	N/A	N/A	5339954
18O2-Perfluorohexanesulfonate	%	87	N/A	N/A	5339954
N-ethyl-d5-perfluorooctane sulfonam	%	67	N/A	N/A	5339954
N-methyl-d3-perfluorooctane sulfona	%	70	N/A	N/A	5339954

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TEST SUMMARY

Maxxam ID: FVC566
Sample ID: INFLUENT PRW-4
Matrix: Water

Collected: 2017/12/21
Shipped:
Received: 2017/12/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFOS and PFOA in water by SPE/LCMS	LCMS	5339954	2018/01/04	2018/01/05	Colm McNamara

Maxxam ID: FVC567
Sample ID: MIDPOINT
Matrix: Water

Collected: 2017/12/21
Shipped:
Received: 2017/12/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFOS and PFOA in water by SPE/LCMS	LCMS	5342895	2018/01/06	2018/01/08	Sin Chii Chia

Maxxam ID: FVC568
Sample ID: EFFLUENT
Matrix: Water

Collected: 2017/12/21
Shipped:
Received: 2017/12/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PFOS and PFOA in water by SPE/LCMS	LCMS	5339954	2018/01/04	2018/01/05	Colm McNamara

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GENERAL COMMENTS

Sample FVC566 [INFLUENT PRW-4] : Perfluorinated Compounds (PFCs): Due to sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample FVC567 [MIDPOINT] : Perfluorinated Compounds (PFCs): Analysis was performed past the method defined holding time. Because of their chemical structure, PFCs are chemically and biologically stable in the environment and resist typical environmental degradation processes. This would suggest a hold time exceedance would not have a significant impact on the data.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
5339954	CM5	Spiked Blank	13C2-6:2 Fluorotelomer sulfonate	2018/01/05		102	%	50 - 150
			13C2-8:2 Fluorotelomer sulfonate	2018/01/05		98	%	50 - 150
			13C2-Perfluorodecanoic acid	2018/01/05		99	%	50 - 150
			13C2-Perfluorododecanoic acid	2018/01/05		76	%	50 - 150
			13C2-Perfluorohexanoic acid	2018/01/05		96	%	50 - 150
			13C2-perfluorotetradecanoic acid	2018/01/05		87	%	50 - 150
			13C2-Perfluoroundecanoic acid	2018/01/05		91	%	50 - 150
			13C4-Perfluorobutanoic acid	2018/01/05		98	%	50 - 150
			13C4-Perfluoroheptanoic acid	2018/01/05		98	%	50 - 150
			13C4-Perfluorooctanesulfonate	2018/01/05		96	%	50 - 150
			13C4-Perfluorooctanoic acid	2018/01/05		99	%	50 - 150
			13C5-Perfluorononanoic acid	2018/01/05		106	%	50 - 150
			13C5-Perfluoropentanoic acid	2018/01/05		100	%	50 - 150
			13C8-Perfluorooctane Sulfonamide	2018/01/05		90	%	50 - 150
			18O2-Perfluorohexanesulfonate	2018/01/05		98	%	50 - 150
			N-ethyl-d5-perfluorooctane sulfonam	2018/01/05		77	%	50 - 150
			N-methyl-d3-perfluorooctane sulfona	2018/01/05		88	%	50 - 150
			6:2 Fluorotelomer sulfonate	2018/01/05		123	%	70 - 130
			8:2 Fluorotelomer sulfonate	2018/01/05		114	%	70 - 130
			N-ethylperfluorooctane sulfonamide	2018/01/05		116	%	70 - 130
			N-ethylperfluorooctane sulfonamidoe	2018/01/05		123	%	70 - 130
			N-methylperfluorooctane sulfonamide	2018/01/05		114	%	70 - 130
			N-methylperfluorooctanesulfonamidol	2018/01/05		108	%	70 - 130
			Perfluorobutanoic acid	2018/01/05		107	%	70 - 130
			Perfluorobutane Sulfonate (PFBS)	2018/01/05		105	%	70 - 130
			Perfluorodecane Sulfonate	2018/01/05		102	%	70 - 130
			Perfluoroheptanoic Acid (PFHpA)	2018/01/05		108	%	70 - 130
			Perfluoroheptane sulfonate	2018/01/05		116	%	70 - 130
			Perfluorohexanoic Acid (PFHxA)	2018/01/05		108	%	70 - 130
			Perfluorohexane Sulfonate (PFHxS)	2018/01/05		114	%	70 - 130
			Perfluorononanoic Acid (PFNA)	2018/01/05		100	%	70 - 130
			Perfluorooctane Sulfonamide (PFOSA)	2018/01/05		126	%	70 - 130
			Perfluoropentanoic Acid (PFPeA)	2018/01/05		106	%	70 - 130
			Perfluorotetradecanoic Acid	2018/01/05		98	%	70 - 130
			Perfluorotridecanoic Acid	2018/01/05		108	%	70 - 130
			Perfluoroundecanoic Acid (PFUnA)	2018/01/05		114	%	70 - 130
			Perfluorodecanoic Acid (PFDA)	2018/01/05		112	%	70 - 130
			Perfluorododecanoic Acid (PFDoA)	2018/01/05		121	%	70 - 130
			Perfluoro-n-Octanoic Acid (PFOA)	2018/01/05		109	%	70 - 130
			Perfluorooctane Sulfonate (PFOS)	2018/01/05		109	%	70 - 130
5339954	CM5	Spiked Blank DUP	13C2-6:2 Fluorotelomer sulfonate	2018/01/05		88	%	50 - 150
			13C2-8:2 Fluorotelomer sulfonate	2018/01/05		82	%	50 - 150
			13C2-Perfluorodecanoic acid	2018/01/05		90	%	50 - 150
			13C2-Perfluorododecanoic acid	2018/01/05		89	%	50 - 150
			13C2-Perfluorohexanoic acid	2018/01/05		92	%	50 - 150
			13C2-perfluorotetradecanoic acid	2018/01/05		86	%	50 - 150
			13C2-Perfluoroundecanoic acid	2018/01/05		95	%	50 - 150
			13C4-Perfluorobutanoic acid	2018/01/05		93	%	50 - 150
			13C4-Perfluoroheptanoic acid	2018/01/05		91	%	50 - 150
			13C4-Perfluorooctanesulfonate	2018/01/05		94	%	50 - 150
			13C4-Perfluorooctanoic acid	2018/01/05		93	%	50 - 150
			13C5-Perfluorononanoic acid	2018/01/05		98	%	50 - 150
			13C5-Perfluoropentanoic acid	2018/01/05		90	%	50 - 150
			13C8-Perfluorooctane Sulfonamide	2018/01/05		95	%	50 - 150

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			18O2-Perfluorohexanesulfonate	2018/01/05		93	%	50 - 150
			N-ethyl-d5-perfluorooctane sulfonam	2018/01/05		82	%	50 - 150
			N-methyl-d3-perfluorooctane sulfona	2018/01/05		82	%	50 - 150
			6:2 Fluorotelomer sulfonate	2018/01/05		121	%	70 - 130
			8:2 Fluorotelomer sulfonate	2018/01/05		130	%	70 - 130
			N-ethylperfluorooctane sulfonamide	2018/01/05		116	%	70 - 130
			N-ethylperfluorooctane sulfonamidoe	2018/01/05		115	%	70 - 130
			N-methylperfluorooctane sulfonamide	2018/01/05		110	%	70 - 130
			N-methylperfluorooctanesulfonamidol	2018/01/05		115	%	70 - 130
			Perfluorobutanoic acid	2018/01/05		113	%	70 - 130
			Perfluorobutane Sulfonate (PFBS)	2018/01/05		109	%	70 - 130
			Perfluorodecane Sulfonate	2018/01/05		116	%	70 - 130
			Perfluoroheptanoic Acid (PFHpA)	2018/01/05		115	%	70 - 130
			Perfluoroheptane sulfonate	2018/01/05		117	%	70 - 130
			Perfluorohexanoic Acid (PFHxA)	2018/01/05		112	%	70 - 130
			Perfluorohexane Sulfonate (PFHxS)	2018/01/05		109	%	70 - 130
			Perfluorononanoic Acid (PFNA)	2018/01/05		111	%	70 - 130
			Perfluorooctane Sulfonamide (PFOSA)	2018/01/05		125	%	70 - 130
			Perfluoropentanoic Acid (PFPeA)	2018/01/05		111	%	70 - 130
			Perfluorotetradecanoic Acid	2018/01/05		114	%	70 - 130
			Perfluorotridecanoic Acid	2018/01/05		118	%	70 - 130
			Perfluoroundecanoic Acid (PFUnA)	2018/01/05		115	%	70 - 130
			Perfluorodecanoic Acid (PFDA)	2018/01/05		121	%	70 - 130
			Perfluorododecanoic Acid (PFDoA)	2018/01/05		110	%	70 - 130
			Perfluoro-n-Octanoic Acid (PFOA)	2018/01/05		111	%	70 - 130
			Perfluorooctane Sulfonate (PFOS)	2018/01/05		108	%	70 - 130
5339954	CM5	RPD	6:2 Fluorotelomer sulfonate	2018/01/05	1.1		%	30
			8:2 Fluorotelomer sulfonate	2018/01/05	12		%	30
			N-ethylperfluorooctane sulfonamide	2018/01/05	0		%	30
			N-ethylperfluorooctane sulfonamidoe	2018/01/05	6.7		%	30
			N-methylperfluorooctane sulfonamide	2018/01/05	3.6		%	30
			N-methylperfluorooctanesulfonamidol	2018/01/05	6.6		%	30
			Perfluorobutanoic acid	2018/01/05	5.1		%	30
			Perfluorobutane Sulfonate (PFBS)	2018/01/05	3.9		%	30
			Perfluorodecane Sulfonate	2018/01/05	13		%	30
			Perfluoroheptanoic Acid (PFHpA)	2018/01/05	7.0		%	30
			Perfluoroheptane sulfonate	2018/01/05	0.52		%	30
			Perfluorohexanoic Acid (PFHxA)	2018/01/05	2.9		%	30
			Perfluorohexane Sulfonate (PFHxS)	2018/01/05	4.5		%	30
			Perfluorononanoic Acid (PFNA)	2018/01/05	10		%	30
			Perfluorooctane Sulfonamide (PFOSA)	2018/01/05	0.32		%	30
			Perfluoropentanoic Acid (PFPeA)	2018/01/05	5.2		%	30
			Perfluorotetradecanoic Acid	2018/01/05	15		%	30
			Perfluorotridecanoic Acid	2018/01/05	9.4		%	30
			Perfluoroundecanoic Acid (PFUnA)	2018/01/05	1.2		%	30
			Perfluorodecanoic Acid (PFDA)	2018/01/05	7.4		%	30
			Perfluorododecanoic Acid (PFDoA)	2018/01/05	9.3		%	30
			Perfluoro-n-Octanoic Acid (PFOA)	2018/01/05	1.6		%	30
			Perfluorooctane Sulfonate (PFOS)	2018/01/05	1.3		%	30
5339954	CM5	Method Blank	13C2-6:2 Fluorotelomer sulfonate	2018/01/05		98	%	50 - 150
			13C2-8:2 Fluorotelomer sulfonate	2018/01/05		101	%	50 - 150
			13C2-Perfluorodecanoic acid	2018/01/05		82	%	50 - 150
			13C2-Perfluorododecanoic acid	2018/01/05		72	%	50 - 150
			13C2-Perfluorohexanoic acid	2018/01/05		87	%	50 - 150

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			13C2-perfluorotetradecanoic acid	2018/01/05		74	%	50 - 150
			13C2-Perfluoroundecanoic acid	2018/01/05		72	%	50 - 150
			13C4-Perfluorobutanoic acid	2018/01/05		89	%	50 - 150
			13C4-Perfluoroheptanoic acid	2018/01/05		83	%	50 - 150
			13C4-Perfluorooctanesulfonate	2018/01/05		83	%	50 - 150
			13C4-Perfluorooctanoic acid	2018/01/05		88	%	50 - 150
			13C5-Perfluorononanoic acid	2018/01/05		89	%	50 - 150
			13C5-Perfluoropentanoic acid	2018/01/05		91	%	50 - 150
			13C8-Perfluorooctane Sulfonamide	2018/01/05		77	%	50 - 150
			18O2-Perfluorohexanesulfonate	2018/01/05		91	%	50 - 150
			N-ethyl-d5-perfluorooctane sulfonam	2018/01/05		68	%	50 - 150
			N-methyl-d3-perfluorooctane sulfona	2018/01/05		76	%	50 - 150
			6:2 Fluorotelomer sulfonate	2018/01/05	<0.020		ug/L	
			8:2 Fluorotelomer sulfonate	2018/01/05	<0.020		ug/L	
			N-ethylperfluorooctane sulfonamide	2018/01/05	<0.020		ug/L	
			N-ethylperfluorooctane sulfonamidoe	2018/01/05	<0.020		ug/L	
			N-methylperfluorooctane sulfonamide	2018/01/05	<0.020		ug/L	
			N-methylperfluorooctanesulfonamidol	2018/01/05	<0.020		ug/L	
			Perfluorobutanoic acid	2018/01/05	<0.020		ug/L	
			Perfluorobutane Sulfonate (PFBS)	2018/01/05	<0.020		ug/L	
			Perfluorodecane Sulfonate	2018/01/05	<0.020		ug/L	
			Perfluoroheptanoic Acid (PFHpA)	2018/01/05	<0.020		ug/L	
			Perfluoroheptane sulfonate	2018/01/05	<0.020		ug/L	
			Perfluorohexanoic Acid (PFHxA)	2018/01/05	<0.020		ug/L	
			Perfluorohexane Sulfonate (PFHxS)	2018/01/05	<0.020		ug/L	
			Perfluorononanoic Acid (PFNA)	2018/01/05	<0.020		ug/L	
			Perfluorooctane Sulfonamide (PFOSA)	2018/01/05	<0.020		ug/L	
			Perfluoropentanoic Acid (PFPeA)	2018/01/05	<0.020		ug/L	
			Perfluorotetradecanoic Acid	2018/01/05	<0.020		ug/L	
			Perfluorotridecanoic Acid	2018/01/05	<0.020		ug/L	
			Perfluoroundecanoic Acid (PFUnA)	2018/01/05	<0.020		ug/L	
			Perfluorodecanoic Acid (PFDA)	2018/01/05	<0.020		ug/L	
			Perfluorododecanoic Acid (PFDoA)	2018/01/05	<0.020		ug/L	
			Perfluoro-n-Octanoic Acid (PFOA)	2018/01/05	<0.020		ug/L	
			Perfluorooctane Sulfonate (PFOS)	2018/01/05	<0.020		ug/L	
5342895	SCH	Spiked Blank	13C2-6:2 Fluorotelomer sulfonate	2018/01/08		77	%	50 - 150
			13C2-8:2 Fluorotelomer sulfonate	2018/01/08		80	%	50 - 150
			13C2-Perfluorodecanoic acid	2018/01/08		65	%	50 - 150
			13C2-Perfluorododecanoic acid	2018/01/08		77	%	50 - 150
			13C2-Perfluorohexanoic acid	2018/01/08		79	%	50 - 150
			13C2-perfluorotetradecanoic acid	2018/01/08		59	%	50 - 150
			13C2-Perfluoroundecanoic acid	2018/01/08		67	%	50 - 150
			13C4-Perfluorobutanoic acid	2018/01/08		79	%	50 - 150
			13C4-Perfluoroheptanoic acid	2018/01/08		79	%	50 - 150
			13C4-Perfluorooctanesulfonate	2018/01/08		79	%	50 - 150
			13C4-Perfluorooctanoic acid	2018/01/08		76	%	50 - 150
			13C5-Perfluorononanoic acid	2018/01/08		83	%	50 - 150
			13C5-Perfluoropentanoic acid	2018/01/08		79	%	50 - 150
			13C8-Perfluorooctane Sulfonamide	2018/01/08		66	%	50 - 150
			18O2-Perfluorohexanesulfonate	2018/01/08		80	%	50 - 150
			N-ethyl-d5-perfluorooctane sulfonam	2018/01/08		63	%	50 - 150
			N-methyl-d3-perfluorooctane sulfona	2018/01/08		60	%	50 - 150
			6:2 Fluorotelomer sulfonate	2018/01/08		103	%	70 - 130
			8:2 Fluorotelomer sulfonate	2018/01/08		101	%	70 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			N-ethylperfluorooctane sulfonamide	2018/01/08		98	%	70 - 130
			N-ethylperfluorooctane sulfonamidoe	2018/01/08		93	%	70 - 130
			N-methylperfluorooctane sulfonamide	2018/01/08		94	%	70 - 130
			N-methylperfluorooctanesulfonamidol	2018/01/08		113	%	70 - 130
			Perfluorobutanoic acid	2018/01/08		106	%	70 - 130
			Perfluorobutane Sulfonate (PFBS)	2018/01/08		99	%	70 - 130
			Perfluorodecane Sulfonate	2018/01/08		111	%	70 - 130
			Perfluoroheptanoic Acid (PFHpA)	2018/01/08		104	%	70 - 130
			Perfluoroheptane sulfonate	2018/01/08		104	%	70 - 130
			Perfluorohexanoic Acid (PFHxA)	2018/01/08		101	%	70 - 130
			Perfluorohexane Sulfonate (PFHxS)	2018/01/08		104	%	70 - 130
			Perfluorononanoic Acid (PFNA)	2018/01/08		94	%	70 - 130
			Perfluorooctane Sulfonamide (PFOSA)	2018/01/08		110	%	70 - 130
			Perfluoropentanoic Acid (PFPeA)	2018/01/08		100	%	70 - 130
			Perfluorotetradecanoic Acid	2018/01/08		110	%	70 - 130
			Perfluorotridecanoic Acid	2018/01/08		114	%	70 - 130
			Perfluoroundecanoic Acid (PFUnA)	2018/01/08		108	%	70 - 130
			Perfluorodecanoic Acid (PFDA)	2018/01/08		124	%	70 - 130
			Perfluorododecanoic Acid (PFDoA)	2018/01/08		90	%	70 - 130
			Perfluoro-n-Octanoic Acid (PFOA)	2018/01/08		101	%	70 - 130
			Perfluorooctane Sulfonate (PFOS)	2018/01/08		103	%	70 - 130
5342895	SCH	Spiked Blank DUP	13C2-6:2 Fluorotelomer sulfonate	2018/01/08		89	%	50 - 150
			13C2-8:2 Fluorotelomer sulfonate	2018/01/08		75	%	50 - 150
			13C2-Perfluorodecanoic acid	2018/01/08		77	%	50 - 150
			13C2-Perfluorododecanoic acid	2018/01/08		69	%	50 - 150
			13C2-Perfluorohexanoic acid	2018/01/08		88	%	50 - 150
			13C2-perfluorotetradecanoic acid	2018/01/08		69	%	50 - 150
			13C2-Perfluoroundecanoic acid	2018/01/08		78	%	50 - 150
			13C4-Perfluorobutanoic acid	2018/01/08		84	%	50 - 150
			13C4-Perfluoroheptanoic acid	2018/01/08		82	%	50 - 150
			13C4-Perfluorooctanesulfonate	2018/01/08		84	%	50 - 150
			13C4-Perfluorooctanoic acid	2018/01/08		84	%	50 - 150
			13C5-Perfluorononanoic acid	2018/01/08		87	%	50 - 150
			13C5-Perfluoropentanoic acid	2018/01/08		83	%	50 - 150
			13C8-Perfluorooctane Sulfonamide	2018/01/08		74	%	50 - 150
			18O2-Perfluorohexanesulfonate	2018/01/08		90	%	50 - 150
			N-ethyl-d5-perfluorooctane sulfonam	2018/01/08		62	%	50 - 150
			N-methyl-d3-perfluorooctane sulfona	2018/01/08		69	%	50 - 150
			6:2 Fluorotelomer sulfonate	2018/01/08		96	%	70 - 130
			8:2 Fluorotelomer sulfonate	2018/01/08		114	%	70 - 130
			N-ethylperfluorooctane sulfonamide	2018/01/08		95	%	70 - 130
			N-ethylperfluorooctane sulfonamidoe	2018/01/08		105	%	70 - 130
			N-methylperfluorooctane sulfonamide	2018/01/08		95	%	70 - 130
			N-methylperfluorooctanesulfonamidol	2018/01/08		101	%	70 - 130
			Perfluorobutanoic acid	2018/01/08		101	%	70 - 130
			Perfluorobutane Sulfonate (PFBS)	2018/01/08		88	%	70 - 130
			Perfluorodecane Sulfonate	2018/01/08		97	%	70 - 130
			Perfluoroheptanoic Acid (PFHpA)	2018/01/08		101	%	70 - 130
			Perfluoroheptane sulfonate	2018/01/08		101	%	70 - 130
			Perfluorohexanoic Acid (PFHxA)	2018/01/08		94	%	70 - 130
			Perfluorohexane Sulfonate (PFHxS)	2018/01/08		97	%	70 - 130
			Perfluorononanoic Acid (PFNA)	2018/01/08		97	%	70 - 130
			Perfluorooctane Sulfonamide (PFOSA)	2018/01/08		108	%	70 - 130
			Perfluoropentanoic Acid (PFPeA)	2018/01/08		98	%	70 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Perfluorotetradecanoic Acid	2018/01/08		100	%	70 - 130
			Perfluorotridecanoic Acid	2018/01/08		97	%	70 - 130
			Perfluoroundecanoic Acid (PFUnA)	2018/01/08		92	%	70 - 130
			Perfluorodecanoic Acid (PFDA)	2018/01/08		104	%	70 - 130
			Perfluorododecanoic Acid (PFDoA)	2018/01/08		102	%	70 - 130
			Perfluoro-n-Octanoic Acid (PFOA)	2018/01/08		98	%	70 - 130
			Perfluorooctane Sulfonate (PFOS)	2018/01/08		102	%	70 - 130
5342895	SCH	RPD	6:2 Fluorotelomer sulfonate	2018/01/08	7.5		%	30
			8:2 Fluorotelomer sulfonate	2018/01/08	12		%	30
			N-ethylperfluorooctane sulfonamide	2018/01/08	3.5		%	30
			N-ethylperfluorooctane sulfonamidoe	2018/01/08	12		%	30
			N-methylperfluorooctane sulfonamide	2018/01/08	0.64		%	30
			N-methylperfluorooctanesulfonamidol	2018/01/08	11		%	30
			Perfluorobutanoic acid	2018/01/08	5.0		%	30
			Perfluorobutane Sulfonate (PFBS)	2018/01/08	12		%	30
			Perfluorodecane Sulfonate	2018/01/08	13		%	30
			Perfluoroheptanoic Acid (PFHpA)	2018/01/08	2.9		%	30
			Perfluoroheptane sulfonate	2018/01/08	3.1		%	30
			Perfluorohexanoic Acid (PFHxA)	2018/01/08	7.4		%	30
			Perfluorohexane Sulfonate (PFHxS)	2018/01/08	7.3		%	30
			Perfluorononanoic Acid (PFNA)	2018/01/08	2.9		%	30
			Perfluorooctane Sulfonamide (PFOSA)	2018/01/08	2.0		%	30
			Perfluoropentanoic Acid (PFPeA)	2018/01/08	1.8		%	30
			Perfluorotetradecanoic Acid	2018/01/08	9.3		%	30
			Perfluorotridecanoic Acid	2018/01/08	16		%	30
			Perfluoroundecanoic Acid (PFUnA)	2018/01/08	16		%	30
			Perfluorodecanoic Acid (PFDA)	2018/01/08	18		%	30
			Perfluorododecanoic Acid (PFDoA)	2018/01/08	13		%	30
			Perfluoro-n-Octanoic Acid (PFOA)	2018/01/08	3.0		%	30
			Perfluorooctane Sulfonate (PFOS)	2018/01/08	0.59		%	30
5342895	SCH	Method Blank	13C2-6:2 Fluorotelomer sulfonate	2018/01/08		89	%	50 - 150
			13C2-8:2 Fluorotelomer sulfonate	2018/01/08		75	%	50 - 150
			13C2-Perfluorodecanoic acid	2018/01/08		73	%	50 - 150
			13C2-Perfluorododecanoic acid	2018/01/08		64	%	50 - 150
			13C2-Perfluorohexanoic acid	2018/01/08		78	%	50 - 150
			13C2-perfluorotetradecanoic acid	2018/01/08		64	%	50 - 150
			13C2-Perfluoroundecanoic acid	2018/01/08		71	%	50 - 150
			13C4-Perfluorobutanoic acid	2018/01/08		80	%	50 - 150
			13C4-Perfluoroheptanoic acid	2018/01/08		84	%	50 - 150
			13C4-Perfluorooctanesulfonate	2018/01/08		75	%	50 - 150
			13C4-Perfluorooctanoic acid	2018/01/08		85	%	50 - 150
			13C5-Perfluorononanoic acid	2018/01/08		85	%	50 - 150
			13C5-Perfluoropentanoic acid	2018/01/08		79	%	50 - 150
			13C8-Perfluorooctane Sulfonamide	2018/01/08		71	%	50 - 150
			18O2-Perfluorohexanesulfonate	2018/01/08		80	%	50 - 150
			N-ethyl-d5-perfluorooctane sulfonam	2018/01/08		61	%	50 - 150
			N-methyl-d3-perfluorooctane sulfona	2018/01/08		65	%	50 - 150
			6:2 Fluorotelomer sulfonate	2018/01/08	<0.0066		ug/L	
			8:2 Fluorotelomer sulfonate	2018/01/08	<0.0066		ug/L	
			N-ethylperfluorooctane sulfonamide	2018/01/08	<0.010		ug/L	
			N-ethylperfluorooctane sulfonamidoe	2018/01/08	<0.0079		ug/L	
			N-methylperfluorooctane sulfonamide	2018/01/08	<0.013		ug/L	
			N-methylperfluorooctanesulfonamidol	2018/01/08	<0.012		ug/L	
			Perfluorobutanoic acid	2018/01/08	<0.0055		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Perfluorobutane Sulfonate (PFBS)	2018/01/08	<0.0054		ug/L	
			Perfluorodecane Sulfonate	2018/01/08	<0.0060		ug/L	
			Perfluoroheptanoic Acid (PFHpA)	2018/01/08	<0.0074		ug/L	
			Perfluoroheptane sulfonate	2018/01/08	<0.0080		ug/L	
			Perfluorohexanoic Acid (PFHxA)	2018/01/08	<0.0035		ug/L	
			Perfluorohexane Sulfonate (PFHxS)	2018/01/08	<0.0056		ug/L	
			Perfluorononanoic Acid (PFNA)	2018/01/08	<0.0087		ug/L	
			Perfluorooctane Sulfonamide (PFOSA)	2018/01/08	<0.0034		ug/L	
			Perfluoropentanoic Acid (PFPeA)	2018/01/08	<0.0075		ug/L	
			Perfluorotetradecanoic Acid	2018/01/08	<0.0027		ug/L	
			Perfluorotridecanoic Acid	2018/01/08	<0.0038		ug/L	
			Perfluoroundecanoic Acid (PFUnA)	2018/01/08	<0.0025		ug/L	
			Perfluorodecanoic Acid (PFDA)	2018/01/08	<0.0061		ug/L	
			Perfluorododecanoic Acid (PFDoA)	2018/01/08	<0.0050		ug/L	
			Perfluoro-n-Octanoic Acid (PFOA)	2018/01/08	<0.0033		ug/L	
			Perfluorooctane Sulfonate (PFOS)	2018/01/08	<0.0060		ug/L	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anjan Desai, Senior Analyst, Liquid Chromatography

Colm McNamara, Senior Analyst, Liquid Chromatography

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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